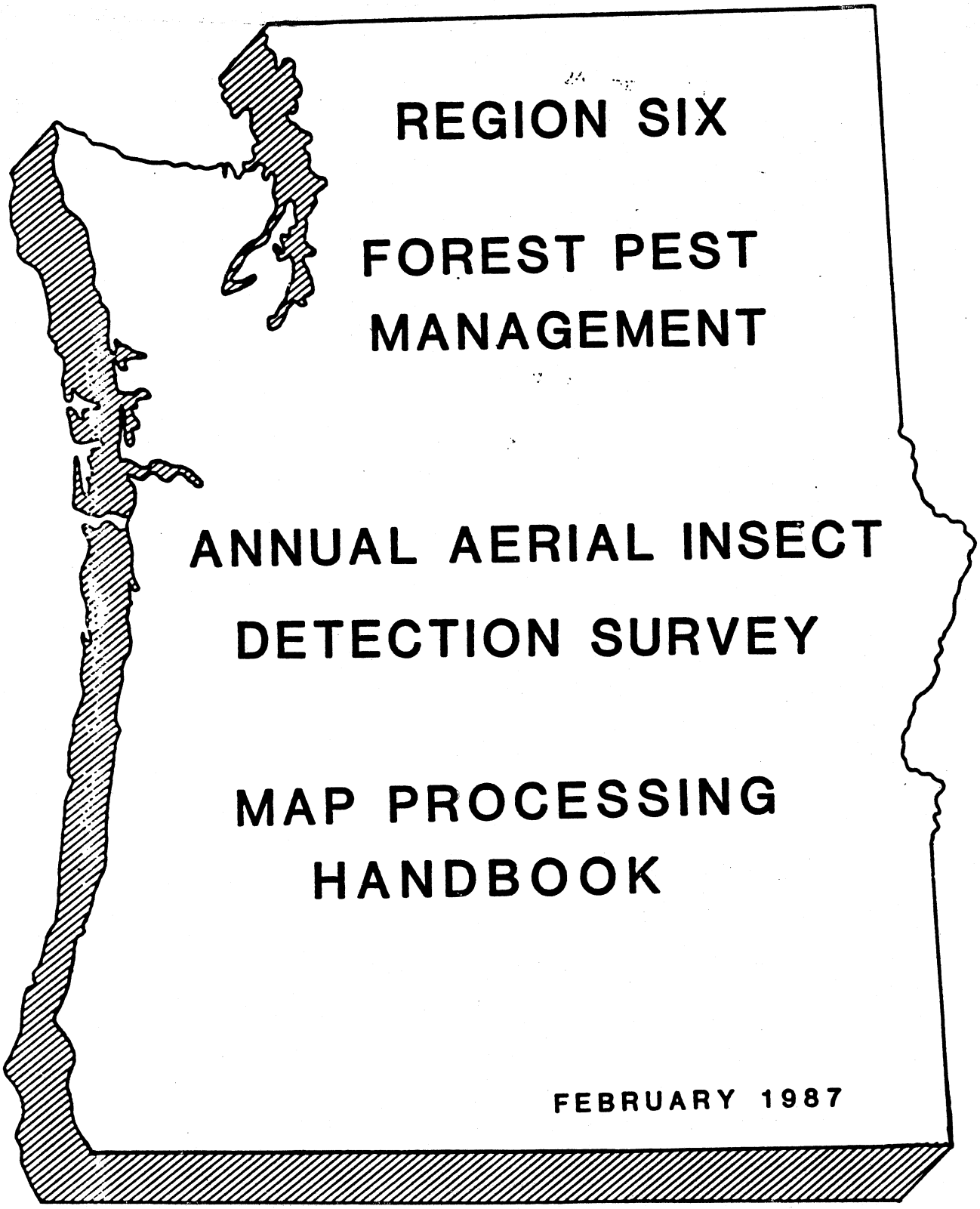
SPR 52-1



REGION SIX

FOREST PEST MANAGEMENT

ANNUAL AERIAL INSECT DETECTION SURVEY

MAP PROCESSING HANDBOOK

FEBRUARY 1987

This handbook has been created
to help those helping Forest Pest Management
process and complete the Annual Aerial Survey task.
Knowing full well the size and complexity
of the survey process from beginning to end,
I hope this will lessen some of the problems,
wasted time and errors often associated with
getting the survey maps and data out to our customers.
This handbook is by no means complete, but it'll help.

Tim McConnell

Tim McConnell
Aerial Survey Forestry Technician
1979 to 1987

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I. AERIAL SURVEY MAP PROCESSING

AN OVERVIEW OF THE BASIC REQUIREMENTS OF PROCESSING THE AERIAL SURVEY MAPS, INCLUDING MASTERS, CRONOFLEXES, MAP LEGENDS, DISTRIBUTION, DIGITIZING, DATA SHEETS, AND A GLOSSARY OF COMMON TERMS.

MAP PROCESSING

The following information is intended to help the summer map person coming into a new job learn briefly, the scope, extent, and goal of one of Forest Pest Management's primary products...the Aerial Survey Map. FPM is responsible for detecting and monitoring insect outbreaks by air on 53,000,000 acres of all forested lands in Washington and Oregon. The survey is done cooperatively with representatives from both Washington State Department of Natural Resouces (DNR) and the Oregon State Department of Foresty (OSDF). Once a Reporting Unit map has been flown, it is the responsibility of all involved to process the map and get it to the "customers" as soon as possible. Most of the work falls upon the map person, who must not only do a sound technical job, but also to keep track of map processing, see that questionable areas are corrected, communicate with observers even though they are out of town all week, report any problems, give input to improvements, ask questions since much of the work is done independently. Aerial survey maps are used by scores of foresters for on the ground information, by land managers who make decisions relative to insect activity, by the Washington D.C. office for statistical information, by researchers and others who only have previous aerial survey maps to gain a historical perspective since the survey started in 1947.

There are approximately 40 different maps to process if all 53,000,000 acres are surveyed. Generally, every other year the west side of both states are not surveyed because of less insect activity and the attempt to save money. Known westside outbreak areas are flown every year.

After a Reporting Area has been surveyed, it is the responsibility of the aerial observers to return the area folder with a ledgible, readible, completed map. Sometimes the maps are combined, sometimes they are not, depending on the amount and type insect activity. Often there are polygons on the map that have question marks or other comments. These areas were observed from the air but the observer was unsure of the what was occurring. These areas frequently need to be ground checked by the observer, an entomologist, field crews or by the forest or state themselves before the final map can be completed. It is important to be aware of these areas to reduce delays in map processing.

The two parts of map processing are the final "black line" map and the data gained from that map. The following outline is intended to be a brief list of the basic chores and some information for the map person doing both parts.

1. PRE-CRONOFLEX MASTER

After a Reporting Area has been flown a master map is made. It should be the combined map of the two observers. Generally it is the responsibility of the two observers to complete the master and turn it over to the map person. Sometimes on slow maps (maps with moderate to few polygons) the combining of the maps can be done by the map person. But if the two observers combine the maps it gives them the opportunity to discuss their observations, learn from the exercise of combining the maps and make the necessary corrections and/or additions before turn in. The ultimate responsibility of the map master belongs to the Forest Service observer bringing the map back to the FPM office. It is the observers who flew the area and drew the polygons, only they know for sure.

A Reporting Area may have been flown, but there could be polygons in question. This often requires some follow-up ground verification or ground checking. This could take several weeks. Keeping track of questionable polygons is important. Communication with the observers is the key. It may be necessary to follow the unknown polygons to the cronoflex and wait for verification. Cronoflexes do not get sent to the printer with blanks or question marks in polygons. Ask questions when problems arise.

2. PREPARE CRONOFLEX

A clean, clear cronoflex is the first step to a good readible map copy. The cronoflex should be washed thoroughly with water and soft tissue. Wash softly and do not rub too hard. Too hard will rub off the emulsion coating on the top of the map. The cronoflexes are reverse positive, that means the permanent printing is on the bottom not on the top where you are washing the old ink.

3. INKED CRONOFLEX

The inked cronoflex is the final master. It will be viewed by many people, microfilmed and kept for historic records and is a product that directly reflects not only the map person but Forest Pest Management. Take time to do everything correct on the cronoflex.

a. Print legibly. The observers often have poor penmanship, but their excuse is "it is bumpy in the airplane". Don't break up polygon lines to print codes, either use arrows or print small.

b. Make sure all polygons are closed.

c. Think readiblity. Is it clear, does it make sense?

d. Insure all overlap areas have polygons included.(See overlap list.)

e. All polygons must have an identifiable code. All codes will be on the map legend. Number of trees per acre will be shown like this 6L-2A, not 6L-2/A.

4. MAP LEGEND

Map legends change each year for Reporting Areas because of changing insect activities. A good method for making a good legend is as follows:

a. Update last year's legend by adding and deleting codes. The legends are on the Wang, so the changes can be made easily.

b. Have new legends typed by the clerical group. Then proof read it. Once again remember possible questionable polygons that still may need ground checking.

c. Copy new paper legend on to plastic. Insure it is dark enough so it will print properly.

d. Tape plastic legend to cronoflex. Use scotch tape, prepare the cronoflex surface for taping by removing old tape, taping over tears in plastic on the corners. Generally only the top side needs tape unless the plastic is warped.

5. CRONOFLEX TO PRINTER

a. Make one copy for in house use prior to sending it out. This gives you the opportunity to see a printed map as well as to have one on hand instead of waiting 2 weeks for the maps to return from the printer. Anticipate high priority demands before sending map to printers.

b. Determine number of copies to be printed. (Check distribution list)

c. When maps return from the printer send them out as soon as possible.

6. AERIAL SURVEY MAP DISTRIBUTION

Getting the map to the customer in a timely manner is very important. There are so many maps and so many customers that it is important to be methodical and keep a good record of the date, customer and number of copies sent.

a. Generally a letter is sent accompanying the maps. This is especially true with the National Forests (NF), Bureau of Indian Affairs (BIA), Bureau of Land Management (BLM) and the National Park System (NP).

b. A form letter is on Wang to be used to go with the maps. This can be updated each year and just the address typed on to the letter.

c. Use a check-off master to keep a log. When one deals with thirty some maps and customers it can get confusing. Record date sent out in case of lost maps (never received) or to help jar your memory when someone asks when was it sent.

7. DATA PROCESSING FROM MAP

The data processing from map is a long job that requires alot of hand work and alot of attention to detail. Quality control and checks for mistakes is difficult, therefore careful correct work is very important. Once a completed "blueline" print from the cronoflex is made the following processes take place.

a. Reporting Area boundaries and number codes are hand drawn in orange or red. See master map or the previous year's master or region master.

1) Reporting Areas
   a) National Forests
   b) National Parks
   c) Indian Reservations
2) Reporting Units within Reporting Areas
   a) Ranger Districts
   b) Wilderness Areas
   c) National Recreation Areas

b. Mark out (delete) inappropriate overlaps from the reporting areas so that there is no duplication of data.

c. Land ownership color coding. See master for ownership status, or a recreation map from the specific Forest or a BLM land status map. Color coding is only necessary inside polygons. Use colored pencils.

1) Green = BLM land
2) Yellow= State and private land
3) No color is necessary for National Forest land or for Indian Reservation maps with only one Reporting Area on the entire map.

8. DIGITIZING

Determining the acreage of each polygon by ownership is done with a Numonic Electric Graphic Calculator 1224, commonly called a digitizer. This machine has been borrowed from Management Systems.

a. Even with this digitizing machine the acres are just an estimate. Small polygons of five trees are usually 10 acres. All acres are to be rounded off to the nearest 10 acres. Calibrate your eye so small polygons can be estimated instead of measured with the machine.

b. Center the tracer in the middle of the bold ink line making the polygon. Move in a clockwise direction.

c. Digitize by township. If a polygon is in two or more townships digitize each part of the polygon. If a small amount of a polygon is in another township, say 10 or 20 acres, go ahead and combine it with the main body of the polygon. The idea is to use your time effectly as well as being exact.

d. Be sure to return to the starting point. Immobilize the map so it doesn't slide on the table. Always move in a clockwise direction.

9. DATA EXTRACTION

After all polygons on the map have been digitized, the acreage figures, along with the insect code, host and damage or number of trees must be recorded for each polygon in each township. The potential for error in this phase is high, so be careful with so many details to record.

a. Be aware of township and range numbering problems on maps. Often the top of the map and the bottom do not always match. Often there are townships with half numbers like 5 1/2.

b. Do not confuse bordering state's meridians.

1) Wallowa-Whitman North Half map has Idaho TWN/RNG along the Snake River.

2) Siskiyou has California TWN/RNG along the southern edge of map.

3) Winema and Fremont maps have California TWN/RNG along the southern edge also.

4) The Colville NF has Idaho TWN/RNG along the eastern edge.

c. Look for polygons that may have been skipped and never digitized.

d. When completing the Reporting Area data form be careful to include the proper ownership code per township as it can change rapidly.

e. It may be that a polygon has an insect label with no code for the computer. Ask and a new code will be established.

f. Be aware that many Wilderness Areas have recent boundary changes.

g. This phase is a double check for the digitizing phase.

h. When a Reporting Area is completed, check over all the sheets for obvious errors.

i. Defoliator letter codes must have number codes when entered on to the data sheets. They must also have a L,M, or H for intensity

j. This work is long and tedious. Stay alert. One day a computer will complete this phase of the process.

DETERMINING NUMONICS CONVERSION FACTOR FOR ANY SCALE OF MAP

$$\frac{\text{map scale reciprical}}{2504.5239} = \text{Numonics Conversion Factor}$$

$$= 12 * \sqrt{43560}$$

scale -	1:126,720 (1/2")	1:100,000 (5/8")	1:62,500 (15')	1:24,000(7 1/2')
1.	reset button	reset button	reset button	reset button
2.	A	A	A	A
3.	SOM	SOM	SOM	SOM
4.	50.5964	39.9278	24.9548	9.58266
5.	EN	EN	EN	EN

Then, when you are ready to digitize a particular polygon and the are is in the right position push A. Push A before the measurement of each polygon.

GLOSSARY

black (blue) line - The light sensitive yellow paper that the aerial survey are printed on from the cronoflex. The machine is on the 5th floor SE.

cronoflex - The master plastic maps that is used to produce the final aerial survey maps.

customer - Anyone who uses our aerial survey maps.

digitize - To compute acreages from polygons on the aerial survey maps.

overlap - Generally one map represents one Reporting Area, but most maps have additional portions of other Reporting Areas. Therefore care must be taken to insure all polygons from adjoining reporting areas are included.

polygon - A sketched closed line enclosing a particular insect damage.

township - 1) A six mile by six mile square. 2) The north/south axis of the grid system identifying every square mile in Region Six (Willamette Meridian).

range - The east/west axis of the grid system identifying every square miles in Region Six (Willamette Meridian).

Reporting Area - The primary map or area.

Reporting Unit - The secondary units within a Reporting Area. Same as an Administrative Unit.

data sheets - After all polygons are digitized by ownership, this data is collected on to a sheet that will go to a key punch contractor for data entry for statistical record keeping.

II. AERIAL SURVEY MAP PROCESSING CHECK LIST

1. A HELPFUL CHECK LIST OF MOST REQUIREMENTS FOR PROCESSING A MAP FROM START TO FINISH. ONE SHEET PER REPORTING AREA.

2. CHECK LIST OF ALL REPORTING AREAS (MAPS).

_____ _____

number reporting area name

AERIAL SURVEY MAP PROCESSING CHECK LIST

I. CRONOFLEX

____Washed (remove old legend, remove all old ink and smudges)

____Inked (proper size rapidograph pen point used, no smeared ink, readible codes)

____Legend (old legend corrected, new legend typed, plastic copy printed dark enough)

____Ready for Printing (legend scotch taped on well, all polygons labelled)

____Single copy made (for in house work, copy checked for errors before going to printers)

II. DIGITIZING

____ Reporting Unit boundaries (all boundaries and their codes in orange)

____Land status (ownerships colored inside polygons)

____Acreages (digitize all polygons by township, unit and ownership)

____Data sheets (all acres extracted from map to key punch form, check sheets)

III. PRINTING

____Date sent to printers

____Date returned from printers

IV. DISTRIBUTION

____Letter typed (accompanies map)

____Date mailed to unit (Forest, Agency)

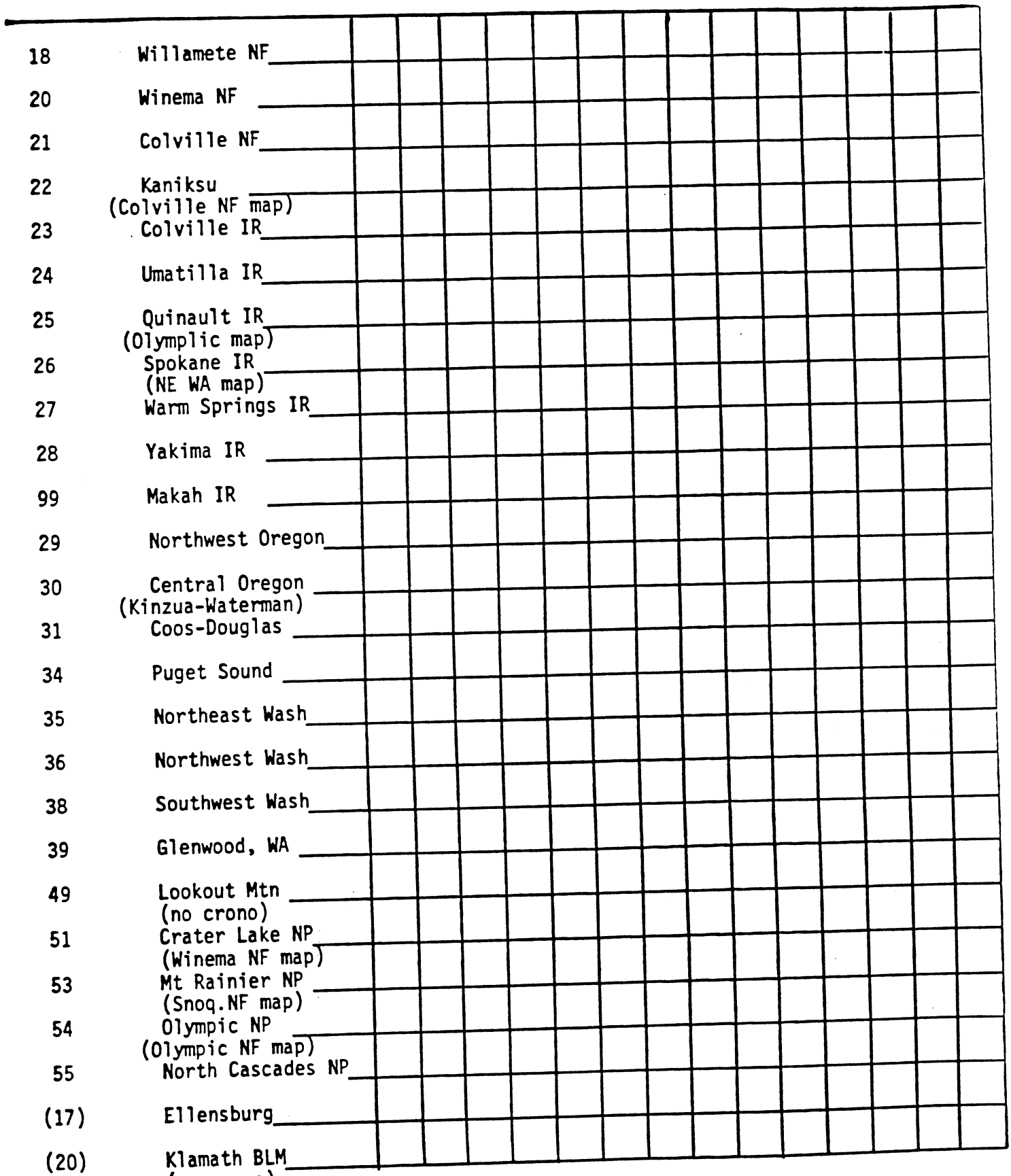
____Date mailed to State (Washington or Oregon)

____Date mailed to BLM

____Date mailed to BIA

____Date mailed to National Park Service

01	Deschutes NF N½	
	Deschutes NF S½	
02	Fremont NF	
03	Gifford Pinchot NF	
04	Malheur NF N½	
	Malheur NF S½	
05	Mt. Baker NF	
	Snoqualmie NF	
06	Mt. Hood NF	
07	Ochoco NF E½	
	Ochoco NF W½	
08	Okanogan NF N½	
	Okanogan NF S½	
09	Olympic NF N½	
	Olympic NF S½	
10	Rogue River NF	
11	Siskiyou NF	
12	Siuslaw NF N½	
	Siuslaw NF S½	
14	Umatilla NF N½	
	Umatilla NF S½	
15	Umpqua NF	
16	Wallowa-Whitman NF N½	
	Wallowa-Whitman NF S½	
17	Wenatchee NF N½	
	Wenatchee NF S½	


18 Willamete NF
20 Winema NF
21 Colville NF
22 Kaniksu
(Colville NF map)
23 Colville IR
24 Umatilla IR
25 Quinault IR
(Olymplic map)
26 Spokane IR
(NE WA map)
27 Warm Springs IR
28 Yakima IR
99 Makah IR
29 Northwest Oregon
30 Central Oregon
(Kinzua-Waterman)
31 Coos-Douglas
34 Puget Sound
35 Northeast Wash
36 Northwest Wash
38 Southwest Wash
39 Glenwood, WA
49 Lookout Mtn
(no crono)
51 Crater Lake NP
(Winema NF map)
53 Mt Rainier NP
(Snoq.NF map)
54 Olympic NP
(Olympic NF map)
55 North Cascades NP
(17) Ellensburg
(20) Klamath BLM
(no crono)

III. CODE LIST

INCLUDES CODES FROM PRINTOUTS FOR INSECTS, REPORTING AREAS, UNITS WITHIN REPORTING AREAS, WILDERNESS AREAS AND THEIR FORESTS.

FOREST INSECT AERIAL SURVEY
MAP LEGEND

MAP SYMBOL	COMPUTER SYMBOL	BARK BEETLES	HOST
1	1	Douglas-fir beetle	Douglas-fir
2	2	Douglas-fir engraver	Douglas-fir
3	3	Engelmann spruce beetle	Engelmann spruce
4	4	Fir engraver	True firs
F	5	Flatheaded woodborer	Douglas-fir, Ponderosa pine
6J	6J	Mountain pine beetle	Jeffrey pine
6K	6K	Mountain pine beetle	Knobcone pine
6L	6L	Mountain pine beetle	Lodgepole pine
6P	6P	Mountain pine beetle	Ponderosa pine
6S	6S	Mountain pine beetle	Sugar pine
6W	6W	Mountain pine beetle	Western white pine
6WB	6WB	Mountain pine beetle	White bark pine
7	7	Oregon pine ips	Ponderosa pine
8	8	Western pine beetle	Ponderosa pine
9	9	Silver fir beetle	Pacific silver fir

MAP SYMBOL	COMPUTER SYMBOL	DEFOLIATOR	HOST
BB	34	Western blackheaded budworm	True firs, hemlock, spruce, douglas-fir
BM	37	Modoc budworm	True fir, douglas-fir
BP	35	Pine budworm (Sugar pine tortrix)	Lodgepole pine, ponderosa pine, Sugar pine
BS	21	Western spruce budworm	Douglas-fir, True fir, spruce
CL	32	Larch casebearer	Western larch
GPM	36	Gouty pitch midge	Ponderosa pine
HL	25	Western hemlock looper	Western hemlock
LL	38	Larch looper	Western larch
LM	22	Larch budmoth	Western larch
MN	—	Douglas-fir needle midge	Douglas-fir
MS	23	Spruce budmoth (Zeiraphera canadensis)	Sitka spruce
ND	31D	Needle miner, Douglas-fir	Douglas-fir
NL	31L	Needle miner, Lodgepole pine	Lodgepole pine
NP	31P	Needle miner, Ponderosa pine	Ponderosa pine
NT	31T	Needle miner, True fir	True fir
NK	31K	Needle miner, Knobcone pine	Knobcone pine
NJ	31J	Needle miner, Jeffery pine	Jeffery pine
NS	31S	Needle miner, Sugar pine	Sugar pine
NW	31W	Needle miner, White pine	White pine
OL	26	Western oak looper	Western oak
PB	28	Pine butterfly	Ponderosa pine
PHL	29	Phantom hemlock looper	Western hemlock
PM	27	Pandora moth	Ponderosa pine
PN	30	Pine needle sheath miner	Ponderosa pine
SD	—	Saw flies, Douglas-fir	Douglas-fir
SF	—	Saw flies, True fir	True fir

SH	—	Saw flies, Western hemlock	Western hemlock
SK	—	Saw flies, Knobcone pine	Knobcone pine
SL	—	Saw flies, Lodgepole pine	Lodgepole pine
SP	—	Saw flies, Ponderosa pine	Ponderosa pine
SW	—	Saw flies, Western larch	Western larch
TA	—	Tent caterpillar, alder	Western red alder
TC	—	Tent caterpillar, others	Other deciduous
TM	—	Douglas-fir tussock moth	Douglas-fir, True fir
TS	—	Tent caterpillar, aspen	Quaking aspen
ZH	40	Douglas-fir budmoth (Zeiraphera hesperiana)	Douglas-fir

MAP SYMBOL	COMPUTER SYMBOL	SUCKING INSECTS	HOST
AB	11	Balsam woolly adelgid	True fir
AS	13	Spruce aphid	Sitka spruce
LS	15	Black pine-leaf scale	Ponderosa pine, Sugar pine
M	16	Spider mites	Douglas-fir, True fir
PS	12	Pine needle scale	Ponderosa pine

MAP SYMBOL	COMPUTER SYMBOL	MISCELLANEOUS	HOST
B	90	Bear damage	Douglas-fir
DH	91	Dying hemlock	Western hemlock
H	92	Hail	All species
RB	93	Red belt, winter damage	All conifers
W	none	Water damage	All species
Wind	none	Windthrow	All species

P Port Orford Cedar

AERIAL SURVEY CODE LIST

CODE NUMBER	REPORTING AREA	REPORTING UNIT (same number)
01	Deschutes NF	Ranger District, or Tribal lands on IR's
02	Fremont NF	Ranger District
03	Gifford Pinchot NF	Ranger District
04	Malheur NF	Ranger District
05	Mt Baker-Snoqualmie NF	Ranger District
06	Mt Hood NF	Ranger District
07	Ochoco NF	Ranger District
08	Okanogan NF	Ranger District
09	Olympic NF	Ranger District
10	Rogue River NF	_
11	Siskiyou NF	_
12	Siuslaw NF	_
13	_	_
14	Umatilla NF	_
15	Umpqua NF	_
16	Wallowa-Whitman NF	_
17	Wenatchee NF	_
18	Willamette NF	_
19	_	_
20	Winema NF	_
21	Colville NF	Indian Heaven WA
22	Kaniksu NF (R-1)	Trapper Creek WA
23	Colville Indian Resv.	Columbia WA
24	Umatilla Indian Resv.	Salmon Huckleberry WA
25	Quinalt Indian Resv.	Badger Creek WA
26	Spokane Indian Resv.	Boulder River WA
27	Warm Springs I.R.	Buckhorn WA
28	Yakima Inidan Resv.	Clear Water WA
29	Northwest Oregon	Colonel Bob WA
30	Cent. OR (Kinzua-Wat)	Glacier View WA
31	Coos-Douglas	Henry M. Jackson WA
32	_	Lake Chelan Sawtooth WA
33	_	Mt Baker WA
34	Puget Sound	Mt Skokomish WA
35	Northeast Washington	Noisy Diobsud WA
36	Northwest Washington	Salmo Priest WA
37	_	Tatoosh WA
38	Southwest Washington	The Brothers WA
39	Glenwood	Wonder Mountain WA
40	_	Black Canyon WA
41	_	Oregon State Land within RA
42	_	Bridge Creek WA
43	_	Bull of the Woods WA
44	_	Cummins Creek WA
45	_	Drift Creek WA
46	_	Grassy Knob WA
47	_	Menagerie WA
48	_	Middle Santiam WA
49	Lookout Mountain	Mill Creek WA
50	_	Monument Rock (Glacier) WA

51	Crater Lake NP	
52	_	Mt Thielsen WA
53	Mt Rainier NP	Washington State Land within RA
54	Olympic NP	North Fork Umatilla WA
55	North Cascades NP	Red Butte WA
56	_	Rock Creek WA
57	_	Rogue Umpqua Divide WA
58	_	Diamond Peak WA
59	_	Eagle Cap WA
60	_	Gearhart WA
61	_	Glacier Peak WA
62	_	Goat Rocks WA
63	_	Kalmiopsis WA
64	_	Mt Adams WA
65	_	Mt Hood WA
66	_	Mt Jefferson WA
67	_	Mountain Lakes WA
68	_	Mt Washington WA
69	_	Pasayten WA
70	_	Strawberry Mountain WA
71	_	Three Sisters WA
72	_	Alpine Lakes WA
73	_	Hells Canyon WA
74	_	Wenaha-Tucannon WA
75	_	Wild Rogue WA
76	_	Mt. St. Helens National Volcanic Monument
77	_	_
78	_	Sky Lakes WA
79	_	Waldo Lake WA
80	_	Wild Rogue WA
81	_	Boulder Creek WA
82	_	North Fork John Day WA
83	_	Table Rock WA (BLM)(westof Mt Hood NF)
84	_	Alpine Lakes (Private)
85	_	Norse Peak WA
86	_	William O. Douglas WA
87	_	_
88	_	BLM (other Federal)
89	_	_
90	_	_
91	_	_
92	_	_
93	_	_
94	_	_
95	_	_
96	_	_
97	_	_
98	_	_
99	_ Makah Indian Resv.	Private Land

OREGON
Wilderness Areas

	CODE	NAME	FOREST
1.	25	Badger Creek	Mt. Hood
2.	40	Black Canyon	Ochoco
3.	81	Boulder Creek	Umpqua
4.	42	Bridge Creek	Ochoco
5.	43	Bull of the Woods	Mt Hood & Willamette
6.	23	Columbia	Mt Hood
7.	44	Cummins Creek	Siuslaw
9.	**58**	Diamond Peak	Willamette & Deschutes
10.	45	Drift Creek	Siuslaw
11.	**59**	Eagle Cap	Wallowa-Whitman
12.	**60**	Gearhart Mountain	Fremont
13.	46	Grassy Knob	Siskiyou
14.	**73**	Hells Canyon	Wallowa-Whitman
15.	**63**	Kalmiopsis	Siskiyou
16.	47	Menagerie	Willamette
17.	48	Middle Santiam	Willamette
18.	49	Mill Creek	Ochoco
19.	50	Monument Rock (Glacier)	Malheur & Wallowa-Whitman
20.	**67**	Mountain Lakes	Winema
21.	**65**	Mount Hood	Mount Hood
22.	**66**	Mount Jefferson	Willamette, Deschutes & Mt Hood
23.	52	Mount Thielsen	Winema, Umpqua, & Deschutes
24.	**68**	Mount Washington	Willamette & Deschutes
25.	82	North Fork John Day	Umatilla & Wallowa-Whitman
26.	54	North Fork Umatilla	Umatilla & Wallowa-Whitman
27.	55	Red Butte	Siskiyou
28.	56	Rock Creek	Siuslaw
29.	57	Rogue Umpqua Divide	Rogue River & Umpqua
30.	24	Salmon-Huckleberry	Mt Hood
31.	78	Sky Lakes	Rogue River & Winema
32	**70**	Strawberry Mountain	Malheur
33.	83	Table Rock (BLM)	West of Mt Hood NF
34.	**71**	Three Sisters	Willamette & Deschutes
35.	79	Waldo Lake	Willamette
36.	**74**	Wenaha - Tucannon	Umatilla
37.	**75**	Wild Rogue	Siskiyou

Bold face numbers indicate previous designated R.U. codes prior to 1986.

WASHINGTON

Wilderness Areas

Number	Code	Name	Forest
1.	72	Alpine Lakes	Mt Baker/Snoqualmie & Wenatchee
2.	84	Alpine Lakes (private)	Private land within area
3.	26	Boulder River	Mt Baker/Snoqualmie
4.	27	Buckhorn	Olympic
5.	28	Clear Water	Mt Baker/Snoqualmie
6.	29	Colonel Bob	Olympic
7.	62	Goat Rocks	Gifford Pinchot & Wenatchee
8.	61	Glacier Peak	Mount Baker-Snoqualmie & Wenatchee
9.	30	Glacier View	Mt Baker/Snoqualmie
10.	31	Henry M. Jackson	Wenatchee & Mt Baker/Snoqualmie
11.	21	Indian Heaven	Gifford Pinchot
12.	32	Lake Chelan Sawtooth	Wenatchee & Okanogan
13.	64	Mount Adams	Gifford Pinchot & Yakima IR
14.	33	Mount Baker	Mt Baker/Snoqualmie
15.	34	Mount Skokomish	Olympic
16.	85	Norse Peak	Mt Baker/Snoqualmie & Wenatchee
17.	35	Noisy Diobsud	Mt Baker/Snoqualmie
18.	69	Pasayten	Okanogan
19.	36	Salmo Priest	Colville & Kaniksu
20.	37	Tatoosh	Gifford Pinchot
21.	38	The Brothers	Olympic
22.	22	Trapper Creek	Gifford Pinchot
23.	86	William O. Douglas	Wenatchee-Gifford Pinchot
24.	74	Wenaha - Tucannon	Umatilla
25.	39	Wonder Mountain	Olympic

IV. MAP OVERLAPS AND INDIAN RESERVATIONS

FOR EACH REPORTING AREA A LIST OF ALL ADJOINING MAPS THAT ARE ALSO ON THAT SPECIFIC REPORTING AREA MAP. ALSO INDIAN RESERVATION COVERAGE INFORMATION.

AERIAL SURVEY MAP & OVERLAPS

Reporting Area	Map	Overlaps
01	Deschutes NF	Warm Springs IR Willamette NF Winema NF Fremont NF
02	Fremont NF	S½ Deschutes NF Winema NF
03	Gifford Pinchot NF	Yakima IR Glenwood Mt. Rainier NP Snoqualmie (Naches RD)
04	Malheur NF	S½ Wallowa-Whitman S½ Ochoco Central OR (Kinzua-Waterman) S½ Umatilla NF
05	Mt. Baker-Snoqualmie NF	North Cascades NP Wenatchee NF Gifford Pinchot NF
06	Mt.Hood NF	Glenwood Warm Springs IR Willamette NF
07	Ochoco NF	Central OR (Kinzua-Waterman) Malheur NF Deschutes NF
08	Okanogan NF	Colville NF Colville IR North Cascades NP Wenatchee NF
09	Olympic NF	Olympic NP Quinault IR SW Washington Puget Sound

Reporting Area	Map	Overlaps
10	Rogue River NF	Umpqua NF Crater Lake NP Winema NF Siskiyou NF Klamath BLM
11	Siskiyou NF	Rogue River NF Coos Douglas
12	Siuslaw NF	Coos Douglas NW Oregon
14	Umatilla NF N½	Wallowa-Whitman NF N½ Wallowa-Whitman NF S½ Umatilla NF S½ Umatilla IR
14	Umatilla NF S½	Umatilla NF N½ Umatilla IR Wallowa-Whitman NF S½ Malheur NF N½ Kinzua-Waterman
15	Umpqua NF	Willamette NF Rogue River NF Crater Lake NP Winema NF Deschutes NF S½
16	Wallowa-Whitman NF N½	Umatilla NF N½ Wallowa-Whitman NF S½
16	Wallowa-Whitman NF S½	Wallowa-Whitman NF N½ Umatilla NF N½ Umatilla NF S½ Malheur NF
17	Wenatchee NF	Okanogan NF North Cascades NP Mt.Baker-Snoqualmie Naches on Snoqualmie Yakima IR

Reporting Area	Map	Overlaps
17	Ellensburg	Wenatchee NF S½
18	Willamette NF	Mt. Hood NF
		Deschutes NF
		Umpqua NF
20	Winema NF	Deschutes NF S½
		Rogue River NF
		Fremont NF
21	Colville NF	Okanogan NF
		Kaniksu
		NE Washington
		Colville IR
30	Central Oregon (Kinzua-Waterman)	Umatilla NF S½
		Malheur NF
		Ochoco NF
31	Coos-Douglas	Siskiyou NF
		Siuslaw NF
34	Puget Sound	Olympic NF
		NW Washington
35	Northeast WA	None
36	Northwest WA	Puget Sound
38	Southwest WA	Olympic NF
39	Glenwood	Gifford Pinchot NF
		Yakima IR
		Mt. Hood NF
55	North Cascades NP	Mt. Baker NF
		Okanogan NF
		Wenatchee NF N½

INDIAN RESERVATION COVERAGE

Here are a few helpful hints to deal with the Indian Reservation Reporting Areas.

1. There are really two different parties, the Bureau of Indian Affairs (BIA) and the Agency itself. Both get maps.
2. Not all Indian Reservations have their own map in our office, even though they each are a separate Reporting Area.
3. The high priority Indian Reservations are:
   a. Colville
   b. Yakima
   c. Warm Springs
   d. Umatilla
4. Indian Reservation Notes:

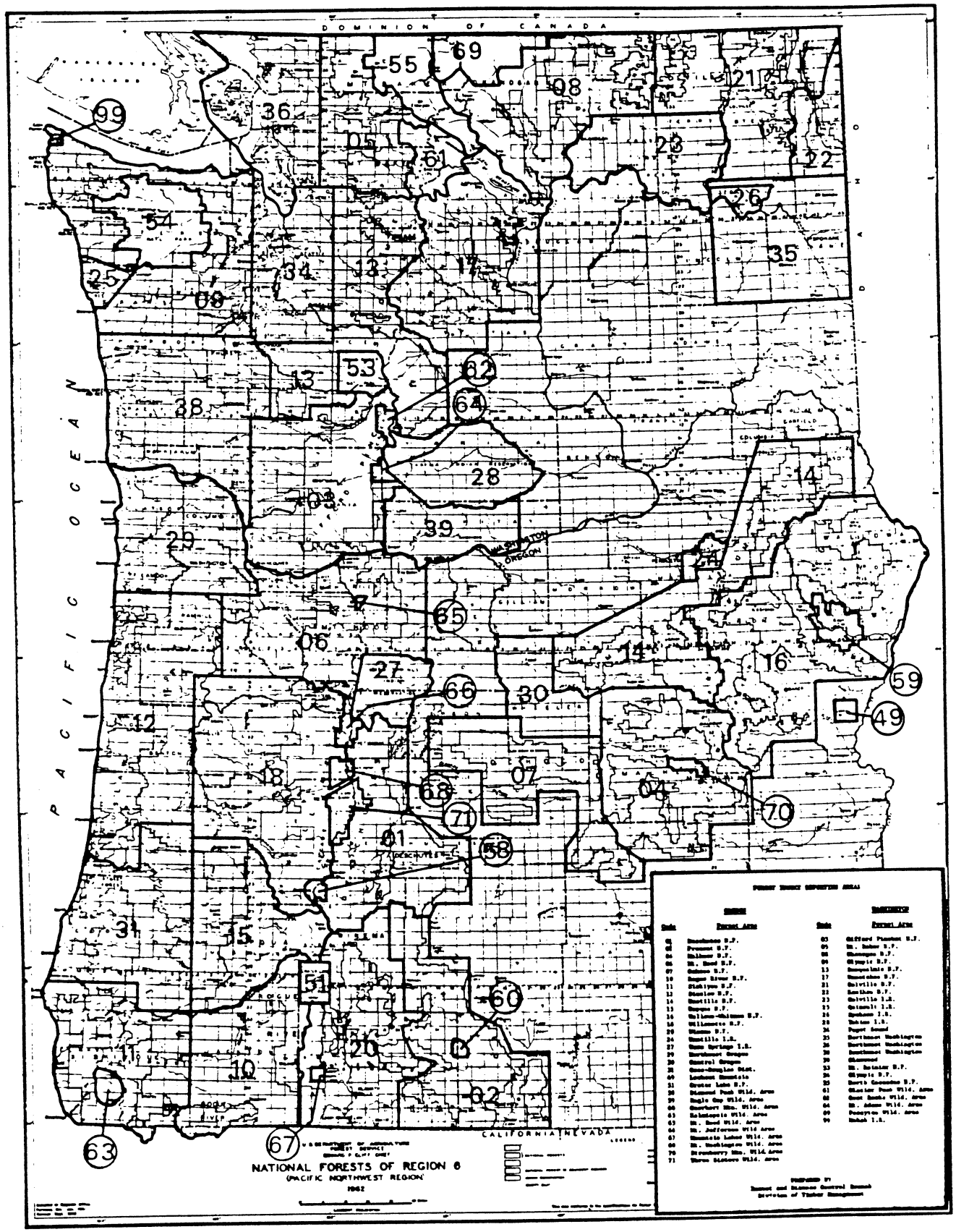
UNIT #	NAME	NOTES
23	Colville IR	Has a separate map. No polygons outside the IR is needed. The map is old and attempts have been made to update the base for something better. Much of the IR is flown off the Colville NF map.
24	Umatilla IR	There is now a one inch to the mile cronoflex for the Umatilla IR. Survey information must be gotten from both the north and south half Umatilla NF maps. Due to different scales polygon transfers must be done by the old eye ball method.
25	Quinalt IR	Most of the Quinalt is on the Olympic NF map. There is no coverage for the southern portion.
26	Spokane IR	All of this IR is covered on the NE Wash. map.
27	Warm Springs IR	Has a separate map, which was updated in 1985 from a 1980 fire map. Observers still fly the north portion off the Mt Hood NF map and the south portion off the Deschutes NF map.
28	Yakima IR	Has a separate map, which was updated in 1985 from a 1982 fire map. Coverage south of the IR is on the Glenwood (1:100,000)map. Coverage north of the IR is either on the Wenatchee NF map or a new enlarged Ellensburg map.
99	Makah IR	no coverage

See mailing list for addresses. The names of contacts may change from year to year, so it might be wise to double check from year to year.

V. REGION SIX REPORTING AREA MAP

THIS MAP IS OUT OF DATE BECAUSE OF NEW WILDERNESS AREAS IN THE PAST FEW YEARS. BUT IT IS FAIRLY ACCURATE FOR REPORTING AREAS.

ATTENTION: Wilderness Area boundaries are no longer accurate, only Reporting Area are accurate.



VI. MAP LEGENDS

INCLUDED ARE ALL 1986 MAPS LEGENDS THAT WILL BE UPDATED IN 1987 FOR THE 1987 MAPS. SOME AREAS WERE NOT FLOWN IN 1986.

1N

1986
FOREST INSECT AERIAL SURVEY
MAP LEGEND

DESCHUTES NATIONAL FOREST NORTH HALF

SYMBOL	BARK BEETLES	HOST
1	Douglas-fir Beetle	Douglas-fir
4	Fir Engraver	True firs
6L	Mountain Pine Beetle	Lodgepole pine
6P	Mountain Pine Beetle	Ponderosa pine
6W	Mountain Pine Beetle	Western White pine
8	Western Pine Beetle	Ponderosa pine

The cause of damage is labelled by symbol followed by number of trees affected (or estimate of number of trees per acre, or by intensity of damage).

SYMBOL	DEFOLIATORS	HOST
BS	Western Spruce Budworm	Douglas-fir, True Firs, Spruce
BB	Black-headed Budworm	True firs-hemlock
BP	Pine Budworm	Lodgepole pine, Ponderosa pine

VL - Very light defoliation, barely visible from air.
1 - 1986 defoliation visible from air.
2 - 1986 defoliation with some bare tops visible (very little gray, still a lot of green foliage).
3 - 1986 defoliation with a lot of bare tops visible (some gray in color, with some foliage in host trees visible).
4 - 1986 defoliation with bare crowns (very gray in color) No green visible in host trees.

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1986
FOREST INSECT AERIAL SURVEY
MAP LEGEND

DESCHUTES NATIONAL FOREST SOUTH HALF

SYMBOL	BARK BEETLES	HOST
1	Douglas-fir Beetle	Douglas-fir
4	Fir Engraver	True firs
6L	Mountain Pine Beetle	Lodgepole pine
6P	Mountain Pine Beetle	Ponderosa pine
6W	Mountain Pine Beetle	Western White pine
8	Western Pine Beetle	Ponderosa pine

The cause of damage is labelled by symbol followed by number of trees affected (or estimate of number of trees per acre, or by intensity of damage).

SYMBOL	DEFOLIATORS	HOST
BS	Western Spruce Budworm	Douglas-fir, True Firs, Spruce
BB	Black-headed Budworm	True firs-hemlock
BP	Pine Budworm	Lodgepole pine, Ponderosa pine

VL - Very light defoliation, barely visible from air.
1 - 1986 defoliation visible from air.
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1986
FOREST INSECT AERIAL SURVEY
MAP LEGEND

FREMONT NATIONAL FOREST

SYMBOL	BARK BEETLES	HOST
4	Fir Engraver	True firs
6L	Mountain Pine Beetle	Lodgepole pine
6P	Mountain Pine Beetle	Ponderosa pine
8	Western Pine Beetle	Ponderosa pine

Beetle damage is mapped by insect symbol and number of trees affected (or estimate of number of trees affected per acre, or by intensity of damage).

SYMBOL	DEFOLIATORS	HOST
BM	Modoc Budworm	Douglas-fir, True firs,
BP	Pine Budworm	Ponderosa pine

The code for damage labelled by intensity is as follows:

VL - Very light defoliation, barely visible from air.
1 - 1986 defoliation visible from air.
2 - 1986 defoliation with some bare tops visible (very little gray, still a lot of green foliage).
3 - 1986 defoliation with a lot of bare tops visible (some gray in color, with some foliage in host trees visible).
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1986
FOREST INSECT AERIAL SURVEY
MAP LEGEND

GIFFORD PINCHOT NATIONAL FOREST

SYMBOL	BARK BEETLES	HOST
1	Douglas-fir Beetle	Douglas-fir
3	Englemann Spruce Beetle	Englemann Spruce
4	Fir Engraver	True firs
6L	Mountain Pine Beetle	Lodgepole pine
6P	Mountain Pine Beetle	Ponderosa pine
6W	Mountain Pine Beetle	Western White pine
8	Western Pine Beetle	Ponderosa pine

The cause of damage is labelled by symbol followed by number of trees affected (or estimate of number of trees per acre, or by intensity of damage).

SYMBOL	DEFOLIATORS	HOST
BS	Western Spruce Budworm	Douglas-fir, True firs, Spruce
BB	Black-headed Budworm	True firs, hemlock; Douglas-fir, Spruce

SYMBOL	SUCKING INSECTS	HOST
AB	Aphid, Balsam Wooley	True firs

SYMBOL	MISCELLANEOUS	HOST
Water (W)	Water Damage	All species
RB	Red belt (winter damage)	All species

The code for damage labelled by intensity is as follows:

L = Light M = Moderate H = Heavy

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MALHEUR NATIONAL FOREST NORTH HALF

SYMBOL	BARK BEETLES	HOST
6L	Mountain Pine Beetle	Lodgepole Pine
6P	Mountain Pine Beetle	Ponderosa Pine
7	Oregon Pine Engraver (Ips)	Ponderosa Pine
8	Western Pine Beetle	Ponderosa Pine

The cause of damage is labelled by symbol followed by number of trees affected (or estimate of number of trees per acre, or by intensity of damage).

SYMBOL	DEFOLIATORS	HOST
BS	Western Spruce Budworm	Douglas-fir, True Firs, Spruce

VL - Very light defoliation, barely visible from air.
1 - 1986 defoliation visible from air.
2 - 1986 defoliation with some bare tops visible (very little gray, still a lot of green foliage).
3 - 1986 defoliation with a lot of bare tops visible (some gray in color, with some foliage in host trees visible).
4 - 1986 defoliation with bare crowns (very gray in color) No green visible in host trees.

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1986
FOREST INSECT AERIAL SURVEY
MAP LEGEND

MT. HOOD NATIONAL FOREST

SYMBOL	BARK BEETLES	HOST
1	Douglas-fir Beetle	Douglas-fir
4	Fir Engraver	True firs
6L	Moutain Pine Beetle	Lodgepole Pine
6P	Mountain Pine Beetle	Ponderosa Pine
6W	Mountain Pine Beetle	Western White Pine

DEFOLIATORS

BB	Western Black-headed Budworm	Douglas-fir, True firs hemlock, Spruce
BP	Pine Budworm	Lodgepole Pine, Ponderosa Pine
BS	Western Spruce Budworm	Douglas-fir, True firs Spruce, Larch

DEFOLIATION INTENSITIES

VL - Very light defoliation barely visible from the air.
1 - 1986 defoliation visible from the air.
2 - 1986 defoliation with some bare tops visible (very little gray, still a lot of green foliage).
3 - 1986 defoliation with a lot of bare tops visible (some gray in color with some foliage in host trees visible).
4 - 1986 defoliation with bare crowns (very gray in color, no green visible in host trees).

MISCELLANEOUS

RB	Red belt (winter damage)	All species

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1986
FOREST INSECT AERIAL SURVEY
MAP LEGEND

OCHOCO NATIONAL FOREST EAST HALF

SYMBOL	BARK BEETLES	HOST
4	Fir Engraver	True firs
6L	Mountain Pine Beetle	Lodgepole pine
6P	Mountain Pine Beetle	Ponderosa pine
7	Oregon Pine Engraver (Ips)	Ponderosa pine
8	Western Pine Beetle	Ponderosa pine

The cause of damage is labelled by symbol followed by number of trees affected (or estimate of number of trees per acre, or by intensity of damage).

SYMBOL	DEFOLIATORS	HOST
BS	Western Spruce Budworm	Douglas-fir, True firs, Spruce
PN	Pine Needle-sheath Miner	Ponderosa pine

The code for damage labelled by intensity is as follows:

VL - Very light defoliation, barely visible from air.
1 - 1986 defoliation visible from air.
2 - 1986 defoliation with some bare tops visible (very little gray, still a lot of green foliage).
3 - 1986 defoliation with a lot of bare tops visible (some gray in color, with some foliage in host trees visible).
4 - 1986 defoliation with bare crowns (very gray in color) No green visible in host trees.

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7 W

1986
FOREST INSECT AERIAL SURVEY
MAP LEGEND

OCHOCO NATIONAL FOREST WEST HALF

SYMBOL	BARK BEETLES	HOST
4	Fir Engraver	True firs
6L	Mountain Pine Beetle	Lodgepole pine
6P	Mountain Pine Beetle	Ponderosa pine
7	Oregon Pine Engraver (Ips)	Ponderosa pine
8	Western Pine Beetle	Ponderosa pine

The cause of damage is labelled by symbol followed by number of trees affected (or estimate of number of trees per acre, or by intensity of damage).

SYMBOL	DEFOLIATORS	HOST
BS	Western Spruce Budworm	Douglas-fir, True firs, Spruce
PN	Pine Needle-sheath Miner	Ponderosa pine

The code for damage labelled by intensity is as follows:

VL - Very light defoliation, barely visible from air.
1 - 1986 defoliation visible from air.
2 - 1986 defoliation with some bare tops visible (very little gray, still a lot of green foliage).
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1986
FOREST INSECT AERIAL SURVEY
MAP LEGEND

OKANOGAN NATIONAL FOREST

SYMBOL	BARK BEETLES	HOST
1	Douglas-fir Beetle	Douglas-fir
3	Englemann Spruce Beetle	Englemann Spruce
4	Fir Engraver	Engelmann spruce
6L	Mountain Pine Beetle	Lodgepole Pine
6P	Mountain Pine Beetle	Ponderosa Pine
6W	Mountain Pine Beetle	Western White Pine
6WB	Mountain Pine Beetle	White Bark Pine
7	Oregon Pine Engraver (IPS)	Ponderosa Pine
8	Western Pine Beetle	Ponderosa Pine

The cause of damage is labelled by symbol followed by number of trees affected (or estimate of number of trees per acre, or by intensity of damage).

SYMBOL	DEFOLIATORS	HOST
BS	Western Spruce Budworm	Douglas-fir, true firs spruce
BB	Western Blackheaded Budworm	Douglas-fir, true firs, western hemlock
LM	Larch Budmoth	Larch

SYMBOL	SUCKING INSECTS	HOST
AB	Balsam Wooley, Adelgid	True firs

SYMBOL	MISCELLANEOUS	HOST
Water	Water damage	All Species
RB	Red Belt (Weather damage)	All Species

The code for damage labelled by intensity is as follows:

L = Light M = Moderate H = Heavy

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1986
FOREST INSECT AERIAL SURVEY
MAP LEGEND

ROGUE RIVER NATIONAL FOREST

SYMBOL	BARK BEETLES	HOST
1	Douglas-fir Beetle	Douglas-fir
4	Fir Engraver	True Firs
6K	Mountain Pine Beetle	Knobcone Pine
6L	Mountain Pine Beetle	Lodgepole Pine
6P	Mountain Pine Beetle	Ponderosa Pine
6S	Mountain Pine Beetle	Sugar Pine
6W	Mountain Pine Beetle	Western White Pine
8	Western Pine Beetle	Ponderosa Pine
F	Flatheaded Woodborers	Ponderosa Pine, Douglas-fir

Beetle damage is mapped by insect symbol and number of trees affected (or estimate of number of trees per acre affected).

SYMBOL	DEFOLIATORS	HOST
BM	Modoc Budworm	Douglas-fir, true firs

SYMBOL	MISCELLANEOUS	HOST
P	Phytophthora	Port-Orford-cedar

VL - Very light defoliation, barely visible from the air.

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1986
FOREST INSECT AERIAL SURVEY
MAP LEGEND

SIUSLAW NATIONAL FOREST (NORTH HALF)

SYMBOL	BARK BEETLES	HOST
1	Douglas-fir Beetle	Douglas-fir

Beetle damage is mapped by insect symbol, and number of trees, estimate of number of trees per acre, or by intensity of damage

DEFOLIATORS

ZH	Zeiraphera hesperians (budmoth)	Douglas-fir
ZC	Zeiraphera canadensis (budmoth)	Sitka spruce

in future should be MS

SUCKING INSECTS

AS	Spruce aphid	Sitka spruce

The code for damage is labelled by insect code followed by intensity:

L = Light M = Moderate H = Heavy

The cause of damage is labelled by symbol followed by number of trees affected (or estimate of number of trees per acre, or by intensity of damage).

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1986
FOREST INSECT AERIAL SURVEY
MAP LEGEND

SIUSLAW NATIONAL FOREST (SOUTH HALF)

SYMBOL	BARK BEETLES	HOST
1	Douglas-fir Beetle	Douglas-fir

Beetle damage is mapped by insect symbol, and number of trees, estimate of number of trees per acre, or by intensity of damage.

SYMBOL	DEFOLIATORS	HOST
ZH	Zeiraphera hesperiana (budmoth)	Douglas-fir
ZP	Zeiraphera canadensis (budmoth)	Sitka spruce

in future should be MS

	SUCKING INSECTS	
AS	Spruce aphid	Sitka spruce

The code for damage is labelled by insect code followed by intensity:

L = Light M = Moderate H = Heavy

The cause of damage is labelled by symbol followed by number of trees affected (or estimate of number of trees per acre, or by intensity of damage).

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1986
FOREST INSECT AERIAL SURVEY
MAP LEGEND

UMATILLA NATIONAL FOREST NORTH HALF

SYMBOL	BARK BEETLES	HOST
1	Douglas-fir Beetle	Douglas-fir
4	Fir Engraver	True Firs
6L	Mountain Pine Beetle	Lodgepole Pine
6P	Mountain Pine Beetle	Ponderosa Pine
7	Oregon Pine Engraver (Ips)	Ponderosa Pine
8	Western Pine Beetle	Ponderosa Pine

The cause of damage is labelled by symbol followed by number of trees affected (or estimate of number of trees per acre or by intensity of damage).

SYMBOL	DEFOLIATORS	HOST
BS	Western Spruce Budworm	Douglas-fir, True Firs, Spruce

VL - Very light defoliation, barely visible from air.
1 - 1986 defoliation visible from air.
2 - 1986 defoliation with some bare tops visible (very little gray, still a lot of green foliage).
3 - 1986 defoliation with a lot of bare tops visible (some gray in color, with some foliage in host trees visible).
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1986
FOREST INSECT AERIAL SURVEY
MAP LEGEND

UMATILLA NATIONAL FOREST SOUTH HALF

SYMBOL	BARK BEETLES	HOST
1	Douglas-fir Beetle	Douglas-fir
4	Fir Engraver	True Firs
6L	Mountain Pine Beetle	Lodgepole Pine
6P	Mountain Pine Beetle	Ponderosa Pine
7	Oregon Pine Engraver (Ips)	Ponderosa Pine
8	Western Pine Beetle	Ponderosa Pine

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BS	Western Spruce Budworm	Douglas-fir, True Firs, Spruce

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FOREST INSECT AERIAL SURVEY
MAP LEGEND

UMPQUA NATIONAL FOREST

SYMBOL	BARK BEETLES	HOST
1	Douglas-fir Beetle	Douglas-fir
4	Fir Engraver	True firs
6L	Moutain Pine Beetle	Lodgepole Pine
6W	Mountain Pine Beetle	Western White Pine
8	Western Pine Beetle	Ponderosa Pine

The cause of damage is labelled by symbol followed by number of trees affected (or estimate of number of trees per acre, or by intensity of damage).

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1986
FOREST INSECT AERIAL SURVEY
MAP LEGEND

WALLOWA-WHITMAN NATIONAL FOREST NORTH HALF

SYMBOL	BARK BEETLES	HOST
1	Douglas-fir Beetle	Douglas-fir
3	Engelmann Spruce Beetle	Engelmann Spruce
4	Fir Engraver	True Firs
6L	Mountain Pine Beetle	Lodgepole Pine
6P	Mountain Pine Beetle	Ponderosa Pine
7	Oregon Pine Engraver (Ips)	Ponderosa Pine
8	Western Pine Beetle	Ponderosa Pine

The cause of damage is labelled by symbol followed by number of trees affected (or estimate of number of trees per acre, or by intensity of damage).

SYMBOL	DEFOLIATORS	HOST
BS	Western Spruce Budworm	Douglas-fir, True Firs, Spruce

VL - Very light defoliation, barely visible from air.
1 - 1986 defoliation visible from air.
2 - 1986 defoliation with some bare tops visible (very little gray, still a lot of green foliage).
3 - 1986 defoliation with a lot of bare tops visible (some gray in color, with some foliage in host trees visible).
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FOREST INSECT AERIAL SURVEY
MAP LEGEND

WALLOWA-WHITMAN NATIONAL FOREST SOUTH HALF

SYMBOL	BARK BEETLES	HOST
1	Douglas-fir Beetle	Douglas-fir
3	Engelmann Spruce Beetle	Engelmann Spruce
4	Fir Engraver	True Firs
6L	Mountain Pine Beetle	Lodgepole Pine
6P	Mountain Pine Beetle	Ponderosa Pine
7	Oregon Pine Engraver (Ips)	Ponderosa Pine
8	Western Pine Beetle	Ponderosa Pine

The cause of damage is labelled by symbol followed by number of trees affected (or estimate of number of trees per acre, or by intensity of damage).

SYMBOL	DEFOLIATORS	HOST
BS	Western Spruce Budworm	Douglas-fir, True Firs, Spruce

VL - Very light defoliation, barely visible from air.
1 - 1986 defoliation visible from air.
2 - 1986 defoliation with some bare tops visible (very little gray, still a lot of green foliage).
3 - 1986 defoliation with a lot of bare tops visible (some gray in color, with some foliage in host trees visible).
4 - 1986 defoliation with bare crowns (very gray in color) No green visible in host trees.

PREPARED BY:
Forest Pest Management
State and Private Forestry
USDA Forest Service, Region 6
P.O. Box 3623, Portland, Oregon 97208

DIRECT ALL INQUIRIES TO THE ABOVE

IN COOPERATION WITH:
Oregon State Department of Forestry
and
Washington State Department of Natural Resources

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1986
FOREST INSECT AERIAL SURVEY
MAP LEGEND

WENATCHEE NATIONAL FOREST

SYMBOL	BARK BEETLES	HOST
1	Douglas-fir Beetle	Douglas-fir
3	Englemann Spruce Beetle	Englemann Spruce
4	Fir Engraver	Engelmann spruce
6L	Mountain Pine Beetle	Lodgepole Pine
6P	Mountain Pine Beetle	Ponderosa Pine
6W	Mountain Pine Beetle	Western White Pine
6WB	Mountain Pine Beetle	White Bark Pine
7	Oregon Pine Engraver (IPS)	Ponderosa Pine
8	Western Pine Beetle	Ponderosa Pine

The cause of damage is labelled by symbol followed by number of trees affected (or estimate of number of trees per acre, or by intensity of damage).

SYMBOL	DEFOLIATORS	HOST
BB	Black Headed Budworm	Douglas-fir, true firs western hemlock
BS	Western Spruce Budworm	Douglas-fir, true firs, spruce
LM	Larch Budmoth	Larch
NP	Needle Miners, P.P.	Ponderosa Pine

The code for damage labelled by intensity is as follows:

L = Light M = Moderate H = Heavy

SYMBOL	MISCELLANEOUS	HOST
W	Water Damage	All Species
Wind	Windthrow	All Species

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USDA Forest Service, Region 6
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1986
FOREST INSECT AERIAL SURVEY
MAP LEGEND

WILLAMETTE NATIONAL FOREST

SYMBOL	BARK BEETLES	HOST
1	Douglas-fir Beetle	Douglas-fir
6L	Mountain Pine Beetle	Lodgepole pine
6P	Mountain Pine Beetle	Ponderosa pine
6W	Mountain Pine Beetle	Western White pine

Beetle damage is mapped by insect symbol and numer of trees affected (or estimate of number of trees effected per acre, or by intensity of damage).

SYMBOL	DEFOLIATORS	HOST
BS	Western Spruce Budworm	Douglas-fir, True firs, Spruce
BB	Black-headed Budworm	True firs, hemlock; Douglas-fir, Spruce

VL - Very light defoliation, barely bisible from air.
1 - 1986 defoliation visible from air.
2 - 1986 defoliation with some bare tops visible (very little gray, still a lot of green foliage).
3 - 1986 defoliation with a lot of bare tops visible (some gray in color, with some foliage in host trees visible).
4 - 1986 defoliation with bare crowns (very gray in color) No green visible in host trees.

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Oregon State Department of Forestry
and
Washington State Department of Natural Resources

'ZU

1986
FOREST INSECT AERIAL SURVEY
MAP LEGEND

WINEMA NATIONAL FOREST

SYMBOL	BARK BEETLES	HOST
4	Fir Engraver	True firs
6L	Mountain Pine Beetle	Lodgepole pine
6P	Mountain Pine Beetle	Ponderosa pine
6S	Mountain Pine Beetle	Ponderosa pine
6W	Mountain Pine Beetle	Ponderosa pine
8	Western Pine Beetle	Ponderosa pine

Beetle damage is mapped by insect symbol and number of trees affected (or estimate of number of trees affected per acre, or by intensity of damage).

SYMBOL	DEFOLIATORS	HOST
BM	Modoc Budworm	Douglas-fir, True firs,
BP	Pine Budworm	Ponderosa pine

The code for damage labelled by intensity is as follows:

L = Light M = Moderate H = Heavy

VL - Very light defoliation, barely visible from air.
1 - 1986 defoliation visible from air.
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State and Private Forestry
USDA Forest Service, Region 6
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and
Washington State Department of Natural Resources

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1986
FOREST INSECT AERIAL SURVEY
MAP LEGEND

COLVILLE NATIONAL FOREST

SYMBOL	BARK BEETLES	HOST
1	Douglas-fir Beetle	Douglas-fir
4	Fir Engraver	True firs
6L	Mountain Pine Beetle	Lodgepole pine
6P	Mountain Pine Beetle	Ponderosa pine
6W	Mountain Pine Beetle	Western White pine
8	Western Pine Beetle	Ponderosa pine

The cause of damage is labelled by symbol followed by number of trees affected (or estimate of number of trees per acre, or by intensity of damage).

SYMBOL	DEFOLIATORS	HOST
LM	Larch Budmoth	Western larch

The code for damage labelled by intensity is as follows:

L = light M = moderate H = heavy

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Forest Pest Management
State and Private Forestry
USDA Forest Service, Region 6
P.O. Box 3623, Portland, Oregon 97208

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IN COOPERATION WITH:
Oregon State Department of Forestry
and
Washington State Department of Natural Resources

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1986
FOREST INSECT AERIAL SURVEY
MAP LEGEND

UMATILLA INDIAN RESERVATION

SYMBOL	BARK BEETLES	HOST
1	Douglas-fir Beetle	Douglas-fir
4	Fir Engraver	True firs
6P	Mountain Pine Beetle	Ponderosa pine
6W	Mountain Pine Beetle	Western White pine

The cause of damage is labelled by symbol followed by number of trees affected (or estimate of number of trees per acre, or by intensity of damage).

SYMBOL	DEFOLIATORS	HOST
BS	Western Spruce Budworm	Douglas-fir, True firs, Spruce

VL - Very light defoliation, barely visible from air.
1 - 1986 defoliation visible from air.
2 - 1986 defoliation with some bare tops visible (very little gray, still a lot of green foliage).
3 - 1986 defoliation with a lot of bare tops visible (some gray in color, with some foliage in host trees visible).
4 - 1986 defoliation with bare crowns (very gray in color) No green visible in host trees.

PREPARED BY:
Forest Pest Management
State and Private Forestry
USDA Forest Service, Region 6
P.O. Box 3623, Portland, Oregon 97208

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IN COOPERATION WITH:
Oregon State Department of Forestry
and
Washington State Department of Natural Resources

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1986
FOREST INSECT AERIAL SURVEY
MAP LEGEND

WARM SPRINGS INDIAN RESERVATION

SYMBOL	BARK BEETLES	HOST
4	Fir Engraver	True firs
6L	Mountain Pine Beetle	Lodgepole pine
6P	Mountain Pine Beetle	Ponderosa pine
6W	Mountain Pine Beetle	Western White pine
7	Oregon Pine (Ips)	Ponderosa pine
8	Western Pine Beetle	Ponderosa pine

Beetle damage is mapped by insect symbol and numer of trees affected (or estimate of number of trees effected per acre, or by intensity of damage).

SYMBOL	DEFOLIATORS	HOST
BS	Western Spruce Budworm	Douglas-fir, True firs, Spruce
BB	Black-headed Budworm	True firs, hemlock; Douglas-fir, Spruce

The code for damage labelled by intensity is as follows:

L = Light M = Moderate H = Heavy

VL - Very light defoliation, barely bisible from air.
1 - 1986 defoliation visible from air.
2 - 1986 defoliation with some bare tops visible (very little gray, still a lot of green foliage).
3 - 1986 defoliation with a lot of bare tops visible (some gray in color, with some foliage in host trees visible).
4 - 1986 defoliation with bare crowns (very gray in color) No green visible in host trees.

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State and Private Forestry
USDA Forest Service, Region 6
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and
Washington State Department of Natural Resources

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1986
FOREST INSECT AERIAL SURVEY
MAP LEGEND

YAKIMA INDIAN RESERVATION

SYMBOL	BARK BEETLES	HOST
1	Douglas-fir Beetle	Douglas-fir
3	Engelmann Spruce Beetle	Engelmann Spruce
4	Fir Engraver	True Firs
6L	Mountain Pine Beetle	Lodgepole Pine
6P	Mountain Pine Beetle	Ponderosa Pine
6W	Mountain Pine Beetle	Western White Pine
7	Oregon Pine Engraver (Ips)	Ponderosa Pine
8	Western Pine Beetle	Ponderosa Pine

Beetle damage is mapped by insect symbol and number of trees affected (or estimate of number of trees affected per acre, or by intensity of damage).

SYMBOL	DEFOLIATORS	HOST
BS	Western Spruce Budworm	Douglas-fir, True firs Spruce

The code for damage labelled by intensity is as follows:

L = Light M = Moderate H = Heavy

PREPARED BY:
Forest Pest Management
State and Private Forestry
USDA Forest Service, Region 6
P.O. Box 3623, Portland, Oregon 97208

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and
Washington State Department of Natural Resources

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No legend needed. Permanent legend is on map.

1986
FOREST INSECT AERIAL SURVEY
MAP LEGEND

KINZUA WATERMAN
(Central Oregon)

SYMBOL	BARK BEETLES	HOST
1	Douglas-fir Beetle	Douglas-fir
6L	Mountain Pine Beetle	Lodgepole pine
6P	Mountain Pine Beetle	Ponderosa pine
7	Oregon Pine Engraver (Ips)	Ponderosa pine
8	Western Pine Beetle	Ponderosa pine

The cause of damage is labelled by symbol followed by number of trees affected (or estimate of number of trees per acre, or by intensity of damage).

SYMBOL	DEFOLIATORS	HOST
BS	Western Spruce Budworm	Douglas-fir, True firs, Spruce

The code for damage labelled by intensity is as follows:

VL - Very light defoliation, barely visible from air.
1 - 1986 defoliation visible from air.
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4 - 1986 defoliation with bare crowns (very gray in color) No green visible in host trees.

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State and Private Forestry
USDA Forest Service, Region 6
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1986
FOREST INSECT AERIAL SURVEY
MAP LEGEND

COOS-DOUGLAS DISTRICT

SYMBOL	BARK BEETLES	HOST
1	Douglas-fir Beetle	Douglas-fir
4	Fir Engraver	True firs

SYMBOL	DEFOLIATORS	HOST
ZP	Zeiraphera canadensis (budmoth)	Sitka spruce

Beetle damage is mapped by insect symbol and number of trees affected (or estimate of number of trees affected per acre, or by intensity of damage).

SYMBOL	DEFOLIATORS	HOST
AS	Spruce Aphid	Sitka spruce

SYMBOL	SUCKING INSECTS	HOST
P	Phytopthora	Port-Orford-cedar

The code for damage labelled by intensity is as follows:

L = Light M = Moderate H = Heavy

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Oregon State Department of Forestry

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1986
FOREST INSECT AERIAL SURVEY
MAP LEGEND

NORTHEAST WASHINGTON AREA

SYMBOL	BARK BEETLES	HOST
1	Douglas-fir Beetle	Douglas-fir
4	Fir Engraver	True Firs
6L	Mountain Pine Beetle	Lodgepole Pine
6P	Mountain Pine Beetle	Ponderosa Pine
6W	Mountain Pine Beetle	Western White Pine
7	Oregon Pine Engraver (Ips)	Ponderosa Pine
8	Western Pine Beetle	Ponderosa Pine

The cause of damage is labelled by symbol followed by number of trees affected (or estimate of number of trees per acre, ro by intensity of damage).

The code for damage labelled by intensity is as follows:

L = Light M = Moderate H = Heavy

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State and Private Forestry
USDA Forest Service, Region 6
P.O. Box 3623, Portland, Oregon 97208

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and
Washington State Department of Natural Resources

VII. MAP DISTRIBUTION LIST

A COMPLETE DISTRIBUTION LIST AND QUANTITY. ALSO MAILING ADDRESSES FOR ALL BLM OFFICES, BIA OFFICES AND NATIONAL PARK SERVICE OFFICES. REQUESTS WILL VARY FROM YEAR TO YEAR.

1987 DISTRIBUTION

AERIAL SURVEY MAPS & REPORTING AREAS

Reporting Area	Name	UNIT	DNR	OSDF	BLM	BIA	AGENCY	FPM	other who	Total
01	Deschutes NF N½	6	-	7	2	-	-	5	6 Ed Blayden	21
	Deschutes NF S½	6	-	7	2	-	-	5	6 "	21
02	Fremont NF	6	-	6	1	-	-	5	6 "	24
03	Gifford Pinchot NF	7	7	-	1	-	-	5	-	20
04	Malheur NF N½	6	-	7	2	-	-	8	-	23
	Malheur NF S½	6	-	7	2	-	-	8	-	23
05	Mt. Baker NF	7	5	-	-	-	-	5		17
	Snoqualmie NF	7	9	-	-	-	-	5	4 [illegible]	25
06	Mt. Hood NF	7	-	6	1	-	-	8	2 →	23 Hood f[illegible] Fremont w[illegible]
07	Ochoco NF E½	6	-	5	2	-	-	5	3 Ed Blayden	21
	Ochoco NF W½	6	-	5	2	-	-	5	3 "	21
08	Okanogan NF N½	6	14	-	1	-	-	8		29
	Okanogan NF S½	6	14	-	1	-	-	8		29
09	Olympic NF N½	5	5	-	1	-	-	3		14
	Olympic NF S½	5	5	-	1	-	-	3		14
10	Rogue River NF	5	-	5	1	-	-	3	3 [illegible]	17
11	Siskiyou NF	6	-	7	2	-	-	3		18
12	Siuslaw NF N½	5	-	9	2	-	-	5		21
	Siuslaw NF S½	5	-	8	2	-	-	5		20
14	Umatilla NF N½	7	3	6	2	1	1	5		25
	Umatilla NF S½	7	-	7	1	1	1	8		25
15	Umpqua NF	6	-	6	1	-	-	3		16
16	Wallowa-Whitman NF N½	9	-	6	1	-	-	5		21
	Wallowa-Whitman NF S½	9	-	6	1	-	-	5		21
17	Wenatchee NF N½	9	12	-	-	-	-	5		26
	Wenatchee NF S½	9	12	-	-			5		26

1987 DISTRIBUTION

	UNIT	DNR	USDF	BLM	BIA	AGENCY	FPM	other	Total
18	Willamete NF	8	-	6	1	-	-	3	-		18
20	Winema NF	10	-	6	1	-	-	5	6	ED BLAYDON	30
21	Colville NF	6	11	-	1	-	-	3	-		21
22	Kaniksu (Colville NF map)										
23	Colville IR	-	10	-	-	2	3	2	-		17
24	Umatilla IR	-	-	3	1	2	1	2	-		9
25	Quinault IR (Olympic map)	-	1	-	-	2	1	1	-		5
26	Spokane IR (NE WA map)	-	1	-	-	2	2	2	-		7
27	Warm Springs IR	-	-	5	-	3	2	5	-		15
28	Yakima IR	-	8	-	-	2	2	3	-		15
99	Makah IR										
29	Northwest Oregon										
30	Central Oregon (Kinzua-Waterman)	-	-	5	2	-	-	5	-		12
31	Coos-Douglas	-	-	8	2	-	-	3	-		13
34	Puget Sound										
35	Northeast Wash	-	10	-	1	-	-	5	-		16
36	Northwest Wash										
38	Southwest Wash	-	5	-	-	-	-	3	-		8
39	Glenwood, WA	-	6	-	-	-	-	3	-		9
49	Lookout Mtn (no crono)	-	-	3	1	-	-	3	-		7
51	Crater Lake NP (Winema NF map)	2	-	-	1	-	-	3	-		6
53	Mt Rainier NP (Snoq.NF map)	2	-	-	-	-	-	1	-		3
54	Olympic NP (Olympic NF map)	2	-	-	-	-	-	1	-		3
55	North Cascades NP	2	1	-	-	-	-	1	-		3
(17)	Ellensburg	-	6	-	1	-	-	1	-		8
(20)	Klamath BLM (no crono)	-	-	1	1	-	-	1	-		3

BLM MAP DISTRIBUTION

OFFICE AND ADDRESS	TELEPHONE	NAME OF OFFICE HEAD	MAPS TO SEND
Baker Resource Center Federal Building 1350 Dewey Street P.O. Box 589 Baker, OR 97814	Com 503-523-6391 FTS 421-6324	Jack Albright Area Manager	Wallowa-Whitman N&S Umatilla N&S
Burns District Off. 74 S. Alvord Street Burns, OR 97720	Com 503-573-5241	Joshua Warborton District Manager	Ochoco Malheur Kinzua-Waterman
Coos Bay Dist. Off. 333 S. Fourth Street P.O. Box 1139 Coos Bay, OR 97420	Com 503-269-5880	Robert Dale District Manager	Coos-Douglas Siskiyou
Eugene Dist. Off. 1255 Pearl Street P.O. Box 10226 Eugene, OR 97401	Com 503-687-6650 FTS 425-6651	Melvin D. Clausen District Manager	Willamette Siuslaw S.
Lakeview Dist. Off. 1000 S. Ninth P.O. Box 151 Lakeview, OR 97660	Com 503-947-2177	Jerry Asher District Manager	Fremont Winema
Medford Dist. Off. 3040 Biddle Road Medford, OR 97501	Com 503-776-4174 FTS 424-4174	David Jones District Manager	Siskiyou Rogue River
Prineville Dist. Off. 185 E. Fourth Street P.O. Box 550 Prineville, OR 97754	Com 503-447-4115	Jim Hancock District Manager	Ochoco Mt. Hood Deschutes
Roseburg Dist. Off. 777 NW Garden Valley Blvd. Roseburg, OR 97470	Com 503-672-4491 FTS 422-4515	Melvin D. Berg District Manager	Coos-Douglas Umpqua
Salem Dist. Off. 1717 Fabry Road SE P.O. Box 3227 Salem, OR 97302	Com 503-399-5646 FTS 422-5646	Joseph Dose District Manager	Mt. Hood Siuslaw N NW Oregon
Tillamook Res. Area Hdqtrs. 6615 Officer's Row Naval Air Station P.O. Box 152 Tillamook, OR 97141	503-842-7546	Jerry Heinz Area Manger	Siuslaw NW Oregon

Spokane Dist. Off. East 4217 Main Spokane, WA 99201	Com 509-456-2570 FTS 439-2570	Joseph K. Buesing District Manager	Umatilla N Colville NE Washington Okanogan
Vale Dist. Off. 365 "A" Street West P.O. Box 700 Vale, OR 97918	Com 503-473-3144	William Calkins District Manager	NO

INDIAN RESERVATIONS and BUREAU of INDIAN AFFAIRS

BIA Regional Office
Attn: Richard French
1425 NE Irving
Portland, OR 97208 503-231-6800

Forest Manager (Robert Harned)
Warm Springs Indian Agency
Warm Springs, OR 97761 503-553-1121
ext. 416

Forest Manager (~~Dean Finch~~ Don Montag)
Spokane Indian Agency
P.O. Box 389
Wellpinit, WA 99040 509-258-4561

Forest Manager (Henry S. Williams)
Yakima Indian Agency
P.O. Box 632
Toppenish, WA 98948 509-865-2255

Forest Manager (Donald Motanic)
Umatilla Indian Agency
Pendleton, OR 97801 503-276-3811
ext. 455

Forest Manager (Clarence Holford)
Colville Indian Agency
P.O. Box 111
Nespelem, WA 99155 509-634-4901

OTHER INTERESTED MAP RECEIVERS

City of Portland Water Bureau
10991 SE Lusted Rd.
Sandy, OR 97055

Mt. Hood National Forest
(Bull Run Watershed)

NATIONAL PARKS

map

Crater Lake National Park
Roger Andrascik
P.O. Box 7
Crater Lake, Oregon 97604
FTS 8-421-2000
COM 8-503-594-2211

Winema NF
Rogue River NF

Mount Rainier National Park
William J. Briggle
Tohoma Woods, Star Route
Ashford, WA 98304
COM 8-206-569-2211

Snoqualmie NF

North Cascades National Park
Keith E. Miller
800 State Street
Sedro Woolley, WA 98284
COM 8-206-855-1331

North Cascades National Park

Jon Jarvis
Cheif Resource Mngr.
2105 Hwy 20
Sedro Wooley, Wa
98284

phone # 8-206-856-5700

Olympic National Park
Roger Contor
600 East Park Ave
Port Angeles, WA 98362
FTS 8-396-4217

Olympic National Forest

VIII. SAMPLES OF ACCOMPANYING LETTERS

A COVER LETTER WILL ACCOMPANY MAPS LEAVING THIS OFFICE. THEY ARE HELPFUL IN KEEPING TRACK OF WHAT WAS SENT OUT.

United States Department of Agriculture — Forest Service — RO

...ply To: 3400

Date: OCT 3 1986

Subject: Forest Insect Detection Survey Maps

To: Forest Supervisor, Malheur NF

Forest

Enclosed are copies of the 1986 Forest Insect Detection Survey Maps that you have requested. If you have requested maps of other areas, they will be forwarded as soon as they are completed.

If you have any questions about the maps, please give Dave Bridgwater a call at (503) 221-2727 or FTS 423-2727.

JAMES S. HADFIELD

JAMES S. HADFIELD
Acting Director of Forest Pest Management

Enclosures

United States Department of Agriculture | Forest Service | Pacific Northwest Region | 319 S.W. Pine P.O. Box 3623 Portland, OR 97208

3400

OCT 3 1986

Bureau of Indian Affairs
Chuck Holm, Forest Manager
Colville Indian Agency
P.O. Box 111
Nespelem, WA 99155

BIA Agency

Dear Mr. Holm:

Enclosed are copies of the 1986 Forest Insect Detection Survey Maps that you have requested. If you have requested maps of other areas, they will be forwarded as soon as they are completed.

If you have any questions about the maps, please give Dave Bridgwater a call at (503) 221-2727 or FTS 423-2727.

Sincerely,

JAMES S. HADFIELD

JAMES S. HADFIELD
Acting Director of Forest Pest Management

Enclosures

DRBridgwater:lmc FLIPS 9/24/86

United States Department of Agriculture | Forest Service | Pacific Northwest Region | 319 S.W. Pine, P.O. Box 3623, Portland, OR 97208

3400 NOV 18 1986

Prineville District Office
185 E. Fourth Street
P.O. Box 550
Prineville, OR 97754

BLM

Dear Mr. Hancock:

Enclosed are copies of the 1986 Forest Insect Detection Survey Maps that you have requested. If you have requested maps of other areas, they will be forwarded as soon as they are completed.

If you have any questions about the maps, please give Dave Bridgwater a call at (503) 221-2727 or FTS 423-2727.

Sincerely,

James S. Hadfield

JAMES S. HADFIELD
Acting Director of Forest Pest Management

Enclosures

United States Department of Agriculture
Forest Service
Pacific Northwest Region
319 S.W. Pine
P.O. Box 3623
Portland, OR 97208

3400

City of Portland Water Bureau
10991 SE Lusted Rd.
Sandy, OR 97055

OTHER

Gentlemen:

Enclosed are copies of the 1986 Forest Insect Detection Survey Maps that you have requested. If you have requested maps of other areas, they will be forwarded as soon as they are completed.

If you have any questions about the maps, please give Dave Bridgwater a call at (503) 221-2727 or FTS 423-2727.

Sincerely,

James S Hadfield

JAMES S. HADFIELD
Acting Director of Forest Pest Management

Enclosures 1 copy of the MT Hood
11/12/86

IX. DATA SHEET BLANKS AND SAMPLES

EVERY FORM NECESSARY TO GET A DIGITIZED MAP TO THE KEY PUNCH CONTRACTOR, SO ALL DATA CAN BE SENT TO FORT COLLINS, COLORADO IN TAPE FORM. ALSO A TABLE OF CONTENTS FROM THE 1986 AERIAL SURVEY DATA BOOK, WHICH IS THE END RESULT OF THIS PROCESS.

1. STATE (41)-53 R6FIDM-TFG-80 SHEET 1 OF ___

2. REPORTING AREA 0 1 R.A. NAME Deschutes NF

3 UNIT	4 TWN	5 N/S	6 RNG	7 E/W	8 INS	H/I	10 NO TRS	11 T/A	12 ACRES	13 INS	14 H/I	15 NO TRS	16 T/A	17 ACRES
02	230	S	60	E	6	L	100		20	6	L	.5	A	150
					6	L	20		60	6	L	1	A	140
58					6	L	1	A	300					
			55	E	6	L	1	A	80					
02	240	S			6	L	.25	A	360	6	W	5		10
			60	E	6	L	.25	A	1580	6	P	3	A	80
					6	S	50		60					
19					7	M			50	7	L			30
	250	S			8		20		40	8		10		20
01					37	L			410	37	H			300
			70	E	37	M			1120	7	M			40
					1		20		20	1		10		20
					22	L			150	22	H			60
	260	S			90	H			170	4		10		20
19					6	W	10		30	34	M			60
01					34	M			360	21	M			1280
					21	H			400	21	H			860
					11	L			30	11	L			20
18					9		5		10	9		100		120
01			80	E	21	M			600	21	H			60

SAMPLE

USDA - FOREST SERVICE

CARD PUNCHING & VERIFYING INSTRUCTIONS

INSTRUCTIONS: Use following symbols in functions column

Symbol	Function
D	DUPLICATE
P	PUNCH
S	SKIP
X-S	X-SKIP
V	VERIFY
L	LEFT JUSTIFY

JOB NAME:

JOB NUMBER:

SOURCE DOCUMENT:

PAGE ____ OF ____

CARD FORM USED

PREPARED BY:

DATE:

Field No.	CARD FIELD	COLUMNS FROM	COLUMNS TO	NO. COLUMNS	FUNCTIONS	REMARKS
* 1	State	1	2	2	PD	
2	Reporting Area	3	4	2	PD	
3	Unit	5	6	2	PD	
4	TWN	7	9	3	PD	
5	N/S	10	10	1	PD	Alphanumaric
6	RNG	11	13	3	PD	
7	E/W	14	14	1	PD	Alphanumaric
** 8	INS	15	16	2	P	
9	H/I	17	18	2	P	Alphanumaric
10	NO. TRS	19	23	5	P	Punch Decimals when present
11	T/A	24	24	1	P	Alphanumaric
12	ACRES	25	29	5	P	
13	INS	30	31	2	P	
14	H/I	32	33	2	P	Alphanumaric
15	NO. TRS	34	38	5	P	Punch Decimals when present
16	T/A	39	39	1	P	Alphanumaric
17	ACRES	40	44	5	P	
18		45	80	36	S	skip
						* Duplicate fields 1-7 only.
						** Punch blanks as blanks for fields 8-17.
						Right adjust all fields.

6600-4 (11/66)

STAPLE DOCUMENTS HERE

310-2227
Type 6031
Count 46.00

R6-FPM

Job No: [illegible]

CSM BATCH TRANSMITTAL

To: CSM or Fiscal Centre
(Cross Out One)

Schedule No.	Accounting Month	Unit No.	Batch No.	No. of Documents	Date Submitted
			1	148	12-16-85

Doc. Prepared for (Check one)		Schedule			Doc. Prepared for (Check one)		Schedule		
OCR	KP	NC	CC	Type	OCR	KP	NC	CC	Type
		A/P	A	Accounts Payable			N/R	C	Collections - No Remit
		I/F	A	Imprest Fund			Misc	P	CSM Records Only - Payments
		R/C	C	Collections			R/C	C	CSM Records Only - Collections
		E/R	E	Equipment Rental			O/P	D	Operating Plan Action
		F/F	F	Firefighter Payroll			O/P	D	Operating Plan Adjustments
		U/O	O	Regular Unpaid Oblig.			15T		WCF Unpaid Oblig.
		GAP	A	GSA			14T		WCF Receivables
		Misc	P	SF - 1081 Payments			1T		WCF Jobs in Progress
		Acct	P	Accounting Adjustments			1X		WCF Job Order & Invoice
		I/RA	J	Interregional Transfer			5X		WCF Intra Fund Adjustment
		W/R	J	Intraregional Transfer			16T		WCF Final Accrued Adjustment
		Misc	P	6500 - 132 Charges					WCF Other Funds Billing - E:
		R/C	C	6500 - 132 Collections					WCF Other Funds Billing - Coll
		Misc	P	Timber Sale Expenditures					WCF Aerial Billing - Exp.
		T/C	C	Timber Sale Collections					WCF Aerial Billing - Coll.
		Misc	P	Manual Payments					FOR
									Fleet Changes

m.c. 69.6

Punch & Verify

CSM Control Totals (72 hrs)

Dollars:

Dr. _____

Cr. _____

Net _____

Hours:

Dr. _____

Cr. _____

Net _____

Fire Time Reports:

Rates _____

M./Hrs. _____

Commissary _____

Equipment Logs:

Hrs./Days/Mo./Mi. _____

Tim McConnel
FS - FPM
221-2727

-70-

Passed for CSM Control	OCR		Key Punch		Key Verify	
	Date	By	Date	By	Date	By

STAPLE DOCUMENTS HERE

CSM BATCH TRANSMITTAL

To: CSM or Fiscal Centre
(Cross Out One)

Schedule No.	Accounting Month	Unit No.	Batch No.	No. of Documents	Date Submitted

Doc. Prepared for (Check one)		Schedule			Doc. Prepared for (Check one)		Schedule		
OCR	KP	NC	CC	Type	OCR	KP	NC	CC	Type
		A/P	A	Accounts Payable			N/R	C	Collections - No Remit
		I/F	A	Imprest Fund			Misc	P	CSM Records Only - Payment
		R/C	C	Collections			R/C	C	CSM Records Only - Collectio
		E/P	E	Equipment Rental			O/P	D	Operating Plan Action
		F/F	F	Firefighter Payroll			O/P	D	Operating Plan Adjustments
		U/O	O	Regular Unpaid Oblig.			15T		WCF Unpaid Oblig.
		GAP	A	GSA			14T		WCF Receivables
		Misc	P	SF - 1081 Payments			1T		WCF Jobs in Progress
		Acct	P	Accounting Adjustments			1X		WCF Job Order & Invoice
		I/RA	J	Interregional Transfer			5X		WCF Intra Fund Adjustment
		W/R	J	Intraregional Transfer			16T		WCF Final Accrued Adjustmen
		Misc	P	6500 - 132 Charges					WCF Other Funds Billing - E
		R/C	C	6500 - 132 Collections					WCF Other Funds Billing - C
		Misc	P	Timber Sale Expenditures					WCF Aerial Billing - Exp.
		T/C	C	Timber Sale Collections					WCF Aerial Billing - Coll.
		Misc	P	Manual Payments					FOR Fleet Changes

CSM Control Totals

Dollars:

Dr. _____

Cr. _____

Net _____

Hours:

Dr. _____

Cr. _____

Net _____

Fire Time Reports:

Rates _____

M./Hrs. _____

Commissary _____

Equipment Logs:

Hrs./Days/Mo./Mi. _____

Passed for CSM Control

OCR		Key Punch		Key Verify	
Date	By	Date	By	Date	By

USDA - FOREST SERVICE

CARD PUNCHING & VERIFYING INSTRUCTIONS

INSTRUCTIONS: Use following symbols in functions column

Symbol	Function
D	DUPLICATE
P	PUNCH
S	SKIP
X-S	X-SKIP
V	VERIFY
L	LEFT JUSTIFY

JOB NAME:

JOB NUMBER:

SOURCE DOCUMENT:

PAGE ____ OF ____

CARD FORM USED

PREPARED BY:

DATE:

Field No.	CARD FIELD	COLUMNS FROM	COLUMNS TO	NO. COLUMNS	FUNCTIONS	REMARKS

1. STATE 41-53 R6FIDM-TFG-80 SHEET ___ OF ___

2. REPORTING AREA ___ ___ R.A. NAME _____

UNIT	4 TWN	5 N/S	6 RNG	7 E/W	8 INS	H/I	10 NO TRS	11 T/A	12 ACRES	13 INS	14 H/I	15 NO TRS	16 T/A	17 ACRES	

1. STATE 41-53

2. REPORTING AREA ___ ___

R6FIDM-TFG-80

SHEET ___ OF ___

R.A. NAME _____

3 UIT	4 TWN	5 N/S	6 RNG	7 E/W	8 INS	H/I	10 NO TRS	11 T/A	12 ACRES	13 INS	14 H/I	15 NO TRS	16 T/A	17 ACRES		

1. STATE 41-53

2. REPORTING AREA ___ ___

R6FIDM-TFG-80

SHEET ___ OF ___

R.A. NAME _____

3 UNIT	4 TWN	5 N/S	6 RNG	7 E/W	8 INS	H/I	10 NO TRS	11 T/A	12 ACRES	13 INS	14 H/I	15 NO TRS	16 T/A	17 ACRES	

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PACIFIC NORTHWEST REGION

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Note: Oregon Pine Ips is included in defoliators because it is recorded by intensity of Light, Moderate and Heavy.